

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference YCT-904	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/JP2004/000711	International filing date (day/month/year) 27/01/2004	(Earliest) Priority Date (day/month/year) 27/01/2003
Applicant EBARA CORPORATION		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

MAPPING-PROJECTION-TYPE ELECTRON BEAM APPARATUS FOR INSPECTING SAMPLE BY USING
ELECTRONS REFLECTED FROM THE SAMPLE

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the drawings,

a. the figure of the **drawings** to be published with the abstract is Figure No. 4

☐ as suggested by the applicant.

☒ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/000711

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01J37/244 G01N23/203 H01L21/66

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01J G01N H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/46798 A (HITACHI LTD ;KUDO TOMOHIRO (JP); EZUMI MAKOTO (JP); OSE YOICHI (JP) 16 September 1999 (1999-09-16) figures 1,4; example 4 -----	1-5,11
X	EP 0 949 653 A (HITACHI INSTRUMENTS ENG ;HITACHI SCIENCE SYSTEMS LTD (JP); HITACHI) 13 October 1999 (1999-10-13) paragraphs [0110], [0111]; claim 2; figure 10 -----	1-5,11
A	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 09, 4 September 2002 (2002-09-04) & JP 2002 141013 A (HITACHI LTD), 17 May 2002 (2002-05-17) abstract; figure ----- -/-	1-5,11

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

30 July 2004

Date of mailing of the international search report

06.08.04

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Wilhelm, J

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/000711

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ANONYMOUS: "Electron Energy Discriminator for Wafer Chip Testing. November 1980." IBM TECHNICAL DISCLOSURE BULLETIN, vol. 23, no. 6, 1 November 1980 (1980-11-01), pages 2288-2290, XP002280584 New York, US the whole document -----	1-5,11
X	WO 00/72355 A (ADLER DAVID ; KLA TENCOR CORP (US); VENEKLASSEN LEE (US)) 30 November 2000 (2000-11-30) page 18, lines 3-14; claims 20,21 -----	6-9, 12-15
Y		10
Y	ZHU W ET AL: "LARGE CURRENT DENSITY FROM CARBON NANOTUBE FIELD EMITTERS" APPLIED PHYSICS LETTERS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 75, no. 6, 9 August 1999 (1999-08-09), pages 873-875, XP000877793 ISSN: 0003-6951 the whole document -----	10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2004/000711

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-5,11

Mapping device with energy discriminator for reflected primary electrons

2. claims: 6-10, 12-15

Mapping device using gas to neutralise surface charge

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2004/000711

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9946798	A	16-09-1999	WO 9946798 A1	16-09-1999
			US 2003127604 A1	10-07-2003
			US 2004089805 A1	13-05-2004

EP 0949653	A	13-10-1999	JP 2911281 B2	23-06-1999
			JP 5151924 A	18-06-1993
			JP 2817072 B2	27-10-1998
			JP 5151926 A	18-06-1993
			JP 2789399 B2	20-08-1998
			JP 5151927 A	18-06-1993
			EP 0949653 A2	13-10-1999
			EP 0810629 A1	03-12-1997
			DE 69224506 D1	02-04-1998
			DE 69224506 T2	01-10-1998
			DE 69231213 D1	03-08-2000
			DE 69231213 T2	01-03-2001
			EP 0548573 A2	30-06-1993
			US 5412209 A	02-05-1995

JP 2002141013	A	17-05-2002	NONE	

WO 0072355	A	30-11-2000	US 6087659 A	11-07-2000
			US 6586733 B1	01-07-2003
			EP 1183707 A1	06-03-2002
			JP 2003500821 T	07-01-2003
			WO 0072355 A1	30-11-2000
			US 2004000642 A1	01-01-2004
			US 2002104964 A1	08-08-2002
			US 2003205669 A1	06-11-2003
